BEFORE THE
FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON, DC 20554

In the Matter of:	)	
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	)	
Reliability and Continuity of Communications Networks, Including Broadband Technologies	)	PS Docket No. 11-60
	)	
Effects on Broadband Communications Networks of Damage or Failure of Network Equipment or Severe Overload	)	PS Docket No. 10-92
	)	
Independent Panel Reviewing the Impact of Hurricane Katrina on Communications Networks	)	EB Docket No. 06-119

To: The Commission

COMMENTS OF THE TELECOMMUNICATIONS INDUSTRY ASSOCIATION

Telecommunications Industry Association

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The Telecommunications Industry Association (TIA) responds to the Commission's *Notice of Inquiry* (NOI) in the above-referenced proceeding.[1] TIA is the leading trade association for the information and communications technology (ICT) industry, with 600 member companies that manufacture or supply the products and services used in global communications across all technology platforms. TIA represents its members on the full range of public policy issues affecting the ICT industry and forges consensus on industry standards. For over 80 years, TIA has enhanced the business environment for broadband, mobile wireless, information technology, networks, cable, satellite, and unified communications. TIA is accredited by the American National Standards Institute (ANSI). TIA appreciates this

[1] *Reliability and Continuity of Communications Networks, Including Broadband Technologies*, PS Docket No. 11-47, *Effects on Broadband Communications Networks of Damage or Failure of Network Equipment or Severe Overload*, PS Docket No. 10-92, *Independent Panel Reviewing the Impact of Hurricane Katrina on Communications Networks*, EB Docket No. 06-119, *Notice of Inquiry*, FCC 11-55 (rel. April. 7, 2011) (NOI).

opportunity to share its insight with the Commission from the perspective of the equipment manufacturer and standard developer.

I. TIA SUPPORTS THE COMMISSION'S GOAL OF ENSURING THAT THE NATION'S NETWORKS ARE RELIABLE AND RESILIENT

Public communication networks are of vital importance to virtually all aspects of our society, including public safety, economic stability, prosperity, and national security. TIA supports the Commission's goals set forth in the NOI to ensure that the nation's communications networks are reliable and resilient, especially during times of major natural and man-made disasters.[2] TIA appreciates the gravity of issues related to this endeavor. and urges the Commission to take as holistic an approach as possible in this undertaking. Such an approach will reflect an understanding of a number of trends that network vendors and network equipment operators have come to find as tried and true principles.

TIA concurs that backup power failure, backhaul failure, access to facilities, and flooding undoubtedly cause some network outages. However, as the Commission is aware, network outages are caused by countless factors, and the Commission should look to as inclusive of a list as possible when examining the causes of outages and overarching factors beyond the causes of outages explored in the NPRM when evaluating reliability.[3] Network reliability is affected by a broad array of factors that may help or hurt the network, including software, hardware, human,

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[2] *Id.* at ¶ 1.

[3] *See Id.* at ¶ 12. TIA is concerned that the Commission may focus too pointedly on lack of power, flooding, facility access, and backhaul failure.

and inter-government relationship factors.[4] When examining how to make networks more resilient and reliable, TIA urges the Commission to take all of these factors into consideration. As recently as April of this year, the National Security Telecommunications Advisory Committee (NSTAC) acknowledged the diverse factors involved with improving networks when it stated that "the evolution of the communications network will be driven by changes in technology, applications, content, devices, and increased requirements for capacity, bandwidth, and spectrum."[5] As noted below, numerous voluntary intra- and inter-industry efforts and public-private partnerships undertake the task of network reliability continuously, producing standards and best practices that are heavily relied upon. TIA supports deference to these efforts in lieu of new regulations on network resiliency and reliability.

The Commission is encouraged to recognize that no network, no matter the planning or regulation, can be designed and implemented to withstand every possible source of failure.[6] The Commission should also recognize that, in spite of network evolution and development of innovative applications and services, legacy infrastructure is, and will continue to be, a critical aspect of communications networks as technology continues to transition to IP-based delivery systems.[7] Despite this reality, today's networks, including legacy wireline systems, are

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[4] *See* NSTAC, *Next Generation Networks Task Force Report* (rel. Mar. 28, 2006) at G-1 to G-10.

[5] NSTAC, *NSTAC Report to the President on Communications Resiliency* (rel. Apr. 19, 2011) at 4 (NSTAC 2011 Report).

[6] *See* NSTAC 2011 Report at 1 ("While it would be near impossible to develop and maintain networks that are invulnerable to disruption, ensuring long-term communications resilience requires that the Government understand future systems and the future technology landscape when investing in and planning for durable, survivable communications for Government officials, first responders, and the general population.").

[7] "For many years the NS/EP community has relied extensively on public telecommunications networks for a large portion of its NS/EP communications needs. This reliance has increased in recent years as the functionality of public networks has improved and as the Federal Government has found more efficient and effective ways to use public telecommunications services. As public network providers have deployed more advanced equipment, the increased use of public telecommunications networks has often also brought the benefits of new features at

continually evolving to meet emerging challenges to resiliency with success. From both the operator and equipment vendor perspective, the highest priority is placed on designing such networks to avoid single points of failure; the transition from legacy technology to internet protocol (IP) -based technology is, in fact, one of the most noteworthy fundamental improvements towards increased resiliency due to the nature of IP.[8] Indeed, the degree of reliance and service expected by Americans on communications networks would not be to the degree that it currently is if networks were not resilient or reliable, and a diversity of solutions that employ primary and secondary backup systems are used to help avoid failures. Networks are currently shifting towards IP technology,[9] and TIA believes that, as this (relatively expeditious) transition occurs, outages due to single points of failure will increasingly become a problem of the past, addressing the Commission's concerns over single points of failure and silent failures.[10]

Whether a network consists primarily of legacy technology or evolved technology (or some combination of the two), network operators have and will continue to require a high degree of flexibility to make decisions to improve network reliability based on an operator's unique circumstances and available resources. These operators routinely make hyper-local decisions on

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substantially more cost-effective rates to the Federal Government. Communications Security, Reliability and Interoperability Council (CSRIC) Working Group 7, *Final Report: Planning for NS/EP Next Generation Network Priority Services during Pandemic Events* (rel. Dec. 2010) at 14 (CSRIC WG7 2010 Report).

[8] IP communications allow for a message to be broken down into packets that are sent off individually in multiple directions in search of the most efficient and least congested route. IP also allows for increased awareness of the cause of message failures. *See* Nuechterlein, J., Weiser, P., *Digital Crossroads: American Telecommunications Policy in the Internet Age* (2007) at 121-123.

[9] *See* CSRIC WG7 2010 Report at 15 (noting that "[t]he PSTN is migrating from circuit-switched technology to packet-switched technology. It is estimated in the next several years that 50% of the PSTN infrastructure used by the NS/EP community will be IP-based, and rising to 80% by 2016, with the transition to IP-based technologies near 100% by 2020.").

[10] NOI at ¶ 40-41.

how to address resiliency challenges based on direct knowledge of unique threats and priorities guided by already-existing industry standards and best practices. All the while, these critical decisions are balanced with the availability of investment capital. Further, continued adherence to the Commission's technology-neutral policy will ensure competition in the marketplace, leading to equipment that responds as quickly as possible to the needs of network operators. The imposition of any new network reliability regulations at this time would hinder the development of these time-tested successful efforts as described below.

II. THE COMMISSION SHOULD NOT TAKE REGULATORY ACTION, BUT SHOULD ENCOURAGE CONTINUED VOLUNTARY AND CONSENSUS-BASED EFFORTS WITHIN COLLABORATIVE GROUPS

A. Regulatory Action is not Required by the Commission to Ensure Continual Improvement of the Reliability and Resiliency of Communications Networks

As a general response to the Commission's inquiry into this matter, TIA notes that the need for new minimum backup power, backhaul redundancy, or network resiliency regulations is not apparent. The records in *Katrina* and *Survivability* items have demonstrated that network operators and equipment vendors take reliability and resiliency very seriously. Further, the Department of Homeland Security (DHS) has acknowledged that operators have "historically factored natural disasters and accidental disruptions into network resiliency architecture, business continuity plans, and disaster recovery strategies."[11] The Commission should acknowledge that under the current regulatory approach, communications networks have been dynamically improving their reliability and resiliency. TIA firmly believes that "market

[11] DHS, *Communications: Critical Infrastructure and Key Resources; Sector Specific Plan as Input to the National Infrastructure Protection Plan* (2007) at 2, *available at* http://www.dhs.gov/xlibrary/assets/nipp-ssp-communications.pdf.

incentives will remain the fundamental driver of industry practices and standards," as noted by the NSTAC.[12]

TIA agrees with the Commission that backup power is important to network reliability.[13] Communications network providers and vendors understand this and other factors that cause outages. On their own initiative, they have worked for many years towards ensuring network dependability, which has resulted in increasingly resilient and reliable networks. As a result of no uniform mandates for key aspects of network reliability such as backup power, each operator has been able to make the most responsible decision to address such concerns in the most efficient manner. How each operator accomplishes this objective varies from system to system, depending on the needs of the operator. It should be noted that most critical facilities, including data centers, already have backup power without a Commission requirement.

A variety of backup electrical power systems currently exist that maintain service when the grid is down. Generally, however, backup power has been provided by value-regulated lead-acid (VRLA) battery systems that provide power coverage while a fossil fuel generator begins operation. While these battery systems are low cost, they are high maintenance and contain lead waste that is harmful to the environment. More recently, advanced alternatives such as ultra-capacitors,[14] flywheels,[15] Superconducting Magnetic Energy Storage technology,[16] and fuel cells

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[12] NSTAC 2011 Report at 14.

[13] *Id.* at ¶ 17.

[14] Ultracapacitors, also called electric double-layer capacitors, function by supplying physically separating positive and negative charges. This produces a large burst of energy that powers a product followed by quickly recharging itself. Ultracapacitors have a longer life than lead batteries and contain no hazardous material.

[15] A flywheel system stores energy kinetically rather than chemically, using the inertia of a spinning mass to store and regenerate power.

have seen and have been increasingly employed by network operators. These technologies are gaining market share as they develop and as the market copes with adoption of these new advances in this technology, unaided by government intrusion. However, as previously noted in the *Katrina* docket, some facilities may lack the adequate space or lease conditions and must follow local and state regulations that emphasize the need for the Commission to avoid sweeping mandates for new reliability equipment.[17]

In the event that facilities are unusable or destroyed due to catastrophe, network operators also routinely deploy temporary facilities to keep networks functioning at maximum capacity while permanent facilities are repaired and rebuilt. For example, operators now deploy mobile cell sites (commonly called a "Cell on Wheels [COW]"), specially designed vehicles with self-contained or dedicated power and environmental capabilities that provide expanded cellular coverage in the event of a failed cell site.[18] Once fully deployed, temporary equipment recreates the configuration of a destroyed or damaged network center and allows for voice and data services to function at normal capacity. This equipment can also be used to set up mobile command centers during disasters where there is no cell coverage to begin with.

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[16] Electricity is stored in magnetic fields generated by direct current flowing through superconducting wire at low temperatures, storing energy in a persistent mode indefinitely until it needs to be used. SMES is currently only viable for uninterrupted power supply capabilities, but the technology continues to develop

[17] *See, e.g.*, Reply Comments of PCIA, EB Docket No. 06-119, WC Docket No. 06-63 (filed Sept. 14, 2007) (discussing existing challenges to the implementation of hydrogen fuel cells at wireless stations).

[18] *See* Comments of CTIA, PS Docket No. 10-92 (filed Sept. 3, 2010) at 6-7.

TIA supports the Commission's goal of removing barriers to innovation and infrastructure deployment.[19] Given the state of network resiliency, TIA firmly believes that applying new uniform rules creates the possibility of several highly impactful and adverse effects. If new regulations are adopted in this matter, the Commission will be ignoring the wide variety of challenges faced by networks across the United States and how they are efficiently dealt with today, as discussed above. Furthermore, such mandates will hinder further infrastructure buildout efforts, including those using funds provided by the Broadband Technology Opportunity Program (BTOP), the Broadband Infrastructure Program (BIP), and the Rural Utility Services' Farm Bill Telecommunications Infrastructure Loan Program (TLIP). Unnecessary mandates could also hinder development and deployments of smart grid technology, which has been heavily invested in across several sectors.[20] TIA strongly believes that forcing the commitment of capital towards meeting reliability mandates, even in instances where it is not appropriate for a facility, when the same capital could otherwise be dedicated to best addressing resiliency challenges as deemed appropriate by those with the best knowledge of what a particular network needs to increase resiliency: the operator of that network. Taking the ability to make these judgments from network operators would *detract* from the network resiliency and reliability goals of the Commission.

Aside from encouraging voluntary industry developments, the need for new network reliability activity on the part of the Commission is not apparent. Network operators and vendors of

[19] See Remarks of FCC Chairman Julius Genachowski, FCC Broadband Acceleration Conference (Feb. 9, 2011) at 1 ("One thing [towards implementing accelerating broadband deployment] government at all levels can do is ensuring efficient, effective regulation. We need rules that serve legitimate public needs without erecting costly or unnecessary barriers.").

[20] In January through May of 2010 alone, there were 30 publicly announced smart grid investment deals in the United States and Canada totaling over $1.8 billion. *See* http://idc-insights-community.com/posts/0cfbc7cb24.

network equipment are already working to make sure networks are as resilient and reliable as possible, and have incentive to do so in order to remain competitive in the market. Given the effects such unnecessary regulation would have, TIA urges the Commission not to impose minimum backup power, backhaul redundancy, or network resiliency performance requirements. Determining minimum requirements is extremely difficult as requirements vary from node to node. Inevitably, the Commission would, by adopting prescriptive performance requirements, create a ceiling to innovation for some operators and increase liability for those in areas that face heightened challenges to network reliability due to any number of natural or man-made factors. Therefore, if requirements must be adopted, they should be as flexible as possible. Further, the Commission is strongly encouraged to ensure that any adopted rules do not explicitly or impliedly endorse one type of technology over another, consistent with its policy of technology neutrality.

B. The FCC Should Support Network Providers and Vendors as they Continue to Voluntarily Undertake Significant Efforts to Ensure Network Reliability

As described below, TIA believes that the current reliability ecosystem – consisting of industry voluntary and consensus-based standards, best practices, self-evaluation efforts, and public-private partnership efforts – should be relied upon by the Commission. Furthermore, there are several non-regulatory actions that the Commission is encouraged to take to further ensure network reliability.

Voluntary, Consensus-Driven Standards. Through the years, network operators and vendors have made great strides in network resiliency through voluntary, consensus-based standards development. TIA has been instrumental in the standards making process both within TIA and in other standard development bodies, and continues to strive for greater network reliability and resiliency. The Commission is urged to recognize that the vast majority of standards developed by TIA have resiliency and reliability factored into them.

In its history, TIA has issued over 3,500 ICT industry standards and related documents, the vast majority of which are ingrained with resiliency and reliability principles. Traditionally, TIA's standards work has focused on vital technical areas such as mobile and personal private radio,[21] point-to-point communications,[22] multimedia access,[23] satellite equipment and systems,[24] user premises cabling[25] and fiber optic cabling.[26] However, in recent years, TIA has expanded its

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[21] Engineering Committee TR-8 formulates and maintains standards for private radio communications systems and equipment for both voice and data applications. TR-8 addresses all technical matters for systems and services, including definitions, interoperability, compatibility, and compliance requirements. The types of systems addressed by these standards include business and industrial dispatch applications, as well as public safety (such as police, ambulance and firefighting) applications.

[22] Engineering Committee TR-14 – Point to Point Communications Systems – is responsible for standards and recommended practices related to terrestrial fixed point-to-point radio communications equipment and systems (microwave radio), primarily in the frequency bands above 960 MHz. Within the TR-14 Committee, only subcommittee TR-14.7, Structural Standard for Antenna Supporting Structures and Antennas, is active.

[23] Engineering Committee TR-30 develops standards related to the functional, electrical and mechanical characteristics of interfaces between data circuit terminating equipment (DCE), data terminal equipment (DTE) and multiMedia gateways, the telephone and voice-over-Internet protocol (VoIP) networks, and other DCE and facsimile systems.

[24] Engineering Committee TR-34 is responsible for standards and studies related to satellite communications systems, including both the space and earth segments. The committee focuses on standards for space-borne and terrestrial hardware; interfaces on standards for satellite and terrestrial systems; and the efficient use of spectrum and orbital resources, including sharing between satellite and terrestrial services. Active projects range from studies on how best to accomplish inter-service spectrum sharing to developing standards for achieving interoperability between satellite systems as well as among satellite and terrestrial systems, networks and services.

[25] Committee TR-41 addresses voluntary standards for telecommunications terminal equipment and systems, specifically those used for voice service, integrated voice and data service and Internet protocol (IP) applications. The work involves developing performance and interface criteria for equipment, systems and private networks, as well as the information necessary to ensure their proper interworking with each other, with public networks, with IP telephony infrastructures and with carrier-provided private-line services. It also includes providing input on product safety issues, identifying environmental considerations for user premises equipment and addressing the administrative aspects of product approval processes. In addition, TR-41 develops criteria for preventing harm to the telephone network, which become mandatory when adopted by the Administrative Council for Terminal Attachments (ACTA).

standards focus to areas such as smart device communications and machine-to-machine (M2M) connections[27] and smart utility networks.[28] Further, while working on these cutting edge segments, TIA coordinates with dozens of global standards developing organizations, and continues its outreach; for example, In February 2011, TIA and The Georgia Institute of Technology Applied Research Corporation (GTARC) announced they signed a Memorandum of Understanding (MOU) to explore collaborative standards development opportunities of mutual interest involving research, testing and outreach in the area of global information and communications infrastructure.[29] This collaboration will take place through the Georgia Tech Research Institute (GTRI), a department of Georgia Tech. A pivotal dimension of the MOU is the intent to define an industry-supported center at Georgia Tech focused on the science, engineering and testing necessary to advance telecommunications standards.

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[26] Engineering Committee TR-42 develops and maintains voluntary telecommunications standards for telecommunications cabling infrastructure in user-owned buildings, such as commercial buildings, residential buildings, homes, data centers, industrial buildings, etc. The generic cabling topologies, design, distances and outlet configurations as well as specifics for these locations are addressed. The committee's standards work covers requirements for copper and optical fiber cabling components (such as cables, connectors and cable assemblies), installation, and field testing in addition to the administration, pathways and spaces to support the cabling.

[27] Engineering Committee TR-50 Smart Device Communications is responsible for the development and maintenance of access agnostic interface standards for the monitoring and bi-directional communication of events and information between smart devices and other devices, applications or networks. These standards development efforts pertain to but are not limited to the functional areas as noted: Requirements; System Architecture; Cross-industry communication; Leverage existing (and future) physical infrastructure; Information models (state diagrams); Security (e.g., data content, mutual authentication); End to End Performance and scalability of equipment and networks; Network Management/Operations; Device Management (incl. discovery and identity); Protocols; Minimum Performance, Conformance and interoperability Testing. TR-50 works to develop a Smart Device Communications framework that can operate over different underlying transport networks (wireless, wired, etc.) and can be adapted to a given transport network by means of an adaptation/convergence layer. The TR-50 framework will make its functionality available to applications through a well-defined Application Programming Interface (API) that is agnostic to the vertical application domain (eHealth, Smart Grid, Industrial Automation, etc.).

[28] Engineering Committee TR-51 Smart Utility Networks technology focuses on efficient access technology with a mesh network topography, optimized for Smart Utility applications. The Smart Utility Networks standards are intended to provide the utility companies with another tool to improve services to their customers. During the TR-51 standards process TIA will work to incorporate the best of the applicable existing standards in order to develop an integrated multi-layer standard (covering layers 1 through 4).

[29] See Press Release, *TIA, Georgia Institute of Technology Sign MOU to Develop Standardization Collaboration* (rel. Feb 22, 2011), *available at* http://tiaonline.org/news_events/press_room/press_releases/2011/PR-222_TIA__Georgia_Institute_of_Technology_Sign_MOU_to_D.cfm.

Internationally, TIA has active roles as secretariat of many International Groups and US Technical Advisory Groups (TAGs), in the International Electrotechnical Commission (IEC) and the International Organization for Standardization (ISO). TIA administers four International Secretariats and 16 US TAGs to international committees. TIA is also an active partner and the Secretariat, for over 10 years, to the Third Generation Partnership Project 2 (3GPP2). It terms of partnerships, TIA is also a long-standing Standards Developing Organization (SDO) in the Global Standards Collaboration (GSC), a forum comprised of SDOs from regions all over the world (Canada, China, Europe, Japan, Korea) that meet on a 12–15 month cycle in the interest and spirit of collaboration and information sharing and to foster worldwide coordination in this world of converging technologies.

While, as noted above, TIA standards generally exist for the purpose of increasing the resiliency and reliability of equipment and the networks that are built on the equipment TIA members manufacture, the following standards are noteworthy as directly relevant examples:

> *TIA-568-A*: This Standard specifies minimum return loss, propagation delay, delay skew, NEXT loss, PSNEXT loss, FEXT loss, ELFEXT, and PSELFEXT for 100 Ω 4-pair category 5e cabling. It also specifies laboratory measurement methods, component and field test methods, and computation algorithms over the specified frequency range. This standard allows for backward compatibility with RJ11, RJ14, RJ25, and RJ61 connectors.

TIA-569-A: The purpose of this Standard is to standardize specific design and construction practices (in support of telecommunications media and equipment) within and between (primarily commercial) buildings. Standards are given for spaces (rooms or areas) and pathways into and through which telecommunications equipment and media are installed.

TIA-606-A: This Standard specifies administration for a generic telecommunications cabling system that will support a multi-product, multi-vendor environment. It also provides information that may be used for the design of administration products, as well as a uniform administration approach that is independent of applications, which may change several times throughout the life of the telecommunications infrastructure. It establishes guidelines for owners, end users, manufacturers, consultants, contractors, designers, installers, and facilities administrators involved in the administration of the telecommunications infrastructure. Use of this Standard is intended to increase the resiliency and value of the system owner's investment in the infrastructure by reducing the labor expense of maintaining the system, by extending the useful economic life of the system, and by providing effective service to users.

TIA-607-B: The purpose of this Standard is to enable and encourage the planning, design, and installation of telecommunications generic bonding and grounding systems within a premises with or without prior knowledge of the telecommunications systems that will subsequently be installed. While primarily intended to provide direction for design of new buildings, this Standard may be used for existing building renovation or retrofit treatment. Design requirements and choices are provided to enable the designer to make informed design decisions.

TIA-942: The purpose of this Standard is to provide requirements and guidelines for the design and installation of a data center or computer room. It is intended for use by designers who need a comprehensive understanding of the data center design including the facility planning, the cabling system, and the network design. The standard will enable the data center design to be considered early in the building development process, contributing to the architectural considerations, by providing information that cuts across the multidisciplinary design efforts; promoting cooperation in the design and construction phases. Adequate planning during building construction or renovation is significantly less expensive and less disruptive than after the facility is operational. Data centers in particular can benefit from infrastructure that is planned in advance to support growth and changes in the computer systems that the data centers are designed to support. This standard presents an infrastructure topology for accessing and connecting the respective elements in the various cabling system configurations currently found in the data center environment. In order to determine the performance requirements of a generic cabling system, various telecommunications services and applications were considered. In addition, this document addresses the floor layout topology related to achieving the proper balance between security, rack density and manageability. The standard specifies a generic telecommunications cabling system for the data center and related facilities whose primary function is information technology. Such application spaces may be dedicated to a private company or institution, or occupied by one or more service providers to host Internet connections, and data storage devices. Data centers support a wide range of transmission protocols. Some of these transmission protocols impose distance restrictions that are shorter than those imposed by this Standard. This standard urges for the consideration of consolidating standardized and proprietary cabling into a single structured cabling system.

Data centers can be categorized according to whether they serve the private domain ("enterprise" data centers) or the public domain (internet data centers, co-location data centers, and other service provider data centers). Enterprise facilities include private corporations, institutions or government agencies, and may involve the establishment of either intranets or extranets. Internet facilities include traditional telephone service providers, unregulated competitive service providers and related commercial operators. The topologies proposed in this document, however, are intended to be applicable to both in satisfying their respective requirements for connectivity (internet access and wide-area communications), operational hosting (web hosting, file storage and backup, database management, etc.), and additional services (application hosting, content distribution, etc.). Failsafe power, environmental controls and fire suppression, and system redundancy and security are also common requirements to facilities that serve both the private and public domain.

TIA-222G: This Standard provides the requirements for the structural design and fabrication of new and the modification of existing structural antennas, antenna-supporting structures, mounts, structural components, guy assemblies, insulators and

> foundations. It is based on limit-states design, and is applicable mainly to steel structures but may also be applied to other materials, when required, so as to provide an equivalent level of reliability. This Standard applies to the calculation of effective projected areas of appurtenances (antennas, mounts, lines, etc.) and to the serviceability limit states appropriate for structures that support antennas.

Best Practices. TIA believes that the use of non-mandatory best practices has resulted in immeasurable increases in network resiliency and reliability. Given the fact that each best practice is not relevant for each area, sector, node, etc. of the communications industry, because they are not mandated, network operators are allowed for the flexibility to employ the best equipment and systems that meets their specific challenges to network reliability. In addition, best practices allow for the "co-existence of new and old technologies"[30] and therefore help facilitate the smoothest transitions in technology deployments. There are currently numerous voluntary industry efforts underway that continually formulate, aggregate, and update best practices, and network operators and equipment vendors regularly look to best practices, both internal and external to their organization.

Furthermore, TIA notes that the Commission has a history of promotion of the use of best practices, and the FCC's Communications Security, Reliability and Interoperability Council (CSRIC) has very recently reinforced the Commission's position on the value of best practices, recommending against mandates and, encouraging continued endorsement of best practices:

[30] CSRIC Working Group 6, *Final Report: Best Practices Implementation* (rel. Dec. 2010) at 3 (CSRIC WG6 2010 Report).

> The FCC should continue to endorse the use of BPs by communications industry organizations. The FCC has a long history of supporting industry's development and utilization of BPs through its previously chartered Advisory Committees, including NRIC and the Media Security and Reliability Council (MSRC). The FCC should maintain this support based upon the work of CSRIC during its current and any future chartered terms.[31]

Within TIA's TR-42 standards committee, (Telecommunications Cabling Systems),[32] for example, TIA has convened TR-42.13.3, a reliability working group that has labored to prepare and maintains reliability standards and associated test methods for fiber optic interconnecting devices, materials and similar types of passive components. This group responsively examines necessary areas for best practices development, and continued work is planned.

Given the abundance of best practice work today, TIA strongly urges the Commission to allow for these successful efforts to continue to evolve and succeed, and to refrain from adopting new unnecessary regulations on network reliability.

Public-Private Efforts. Numerous private-public efforts currently exist that work to improve network reliability today. For example, the Communications Sector Coordinating Council

[31] CSRIC WG6 2010 Report at 17

[32] Engineering Committee TR-42 develops and maintains voluntary telecommunications standards for telecommunications cabling infrastructure in user-owned buildings, such as commercial buildings, residential buildings, homes, data centers, industrial buildings, etc. The generic cabling topologies, design, distances and outlet configurations as well as specifics for these locations are addressed. The committee's standards work covers requirements for copper and optical fiber cabling components (such as cables, connectors and cable assemblies), installation, and field testing in addition to the administration, pathways and spaces to support the cabling.

(CSCC)[33] provides input to the Federal government on man-made and natural threats to critical communications, and TIA is a member of its Cybersecurity Task Force. Currently, the CSCC is drafting a National Security Risk Assessment on threats to communications networks. TIA believes that no new regulatory action is required at this time to encourage efforts such as the CSCC in their work; however, the FCC is encouraged to

On the Commission's part, TIA believes that it should continue to utilize advisory groups to facilitate network resiliency and reliability. The CSRIC, which TIA is a member of, exists to ensure, among other things, optimal security and reliability of communications systems, which include telecommunications, media, and public safety.[34] Adoption of new rules could, aside from hampering voluntary industry efforts as noted above, likewise derail the efforts of the CSRIC. Similar effects would be felt by the FCC's Media Security and Reliability Council and Emergency Response Interoperability Center Public Safety Advisory Committee (ERIC PSAC). The Commission should continue to support each of these committees in reaching the goal of network resiliency and reliability.

Commission Recognition of Reliability in Networks. The Commission should also encourage network resiliency by acknowledging the current reliability of networks. The Commission could

[33] CSCC, with its government partners, works to protect the Nation's communications critical infrastructure and key resources (CIKR) from harm and to ensure that the Nation's communications networks and systems are secure, resilient, and rapidly restored after a natural or manmade disaster. Priorities are to (1) Identify, prioritize, and coordinate policy issues related to the protection of critical infrastructure and key resources, (2) Facilitate sharing of information related to physical and cyber threats, vulnerabilities, incidents, potential protective measures, and best practices; and (3) Facilitate policy issues related to response and recovery activities and communication following an incident or event. The CSCC works closely with the Communications Government Coordinating Council (CGCC) on a wide range of CIKR protection activities and issues and sets the security goals for the sector as prescribed in the NIPP Risk Management Framework. *See* U.S. Communications Sector Coordinating Council, Background, *available at* http://www.commscc.org/ (last visited July 1, 2011).

[34] CSRIC Charter, *available at* http://transition.fcc.gov/pshs/docs/advisory/csric/CSRC_charter_03-19-2009.pdf.

take action to encourage increased reliability in networks by publicly recognizing networks or equipment that proves to be resilient in emergencies without divulging proprietary or sensitive information. This program could operate much like the Technical Advisory Committee (TAC)-recommended municipal race-to-the-top broadband deployment recognition program.[35] When an event occurs that places stress on a communications system, exceptional reliability could be publicly applauded by the Commission. The best practices and/or standards used by the recognized operator or vendor could be also promoted.

III. THE COMMISSION SHOULD ENSURE THAT IT HAS SUFFICIENT JURISDICTION TO UNDERTAKE ANY NEW RELATED REGULATORY ACTIVITY

In the NOI, the Commission proposes a variety of possible statutory bases for taking action on network reliability.[36] TIA believes that this examination is valid, and that the Commission should make all efforts to ensure that jurisdictional authority is clear before proceeding to propose rule changes in regard to network resiliency and reliability. The record has and, TIA is confident, will continue to demonstrate that all affected stakeholders take network reliability and resiliency very seriously, and that the state of these networks reflects that tenant, resulting in truly reliable and resilient networks.

Fundamental to each of the mentioned portions of the Communications Act in the NOI as possible bases for activity in this area, the Commission must be able to demonstrate that any

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[35] Memorandum from TAC Chairman Tom Wheeler to FCC Commissioner Julius Genachowski, *Technical Advisory Council Chairman's Report* (Apr. 22, 2011) at 1, *available at* http://transition.fcc.gov/Daily_Releases/Daily_Business/2011/db0425/DOC-306065A1.pdf.

[36] NOI at ¶ 49-50

regulations adopted would be supported by record evidence so that a rational connection exists between the regulations and the facts.[37] Given the current dynamically-improving state of network reliability and resiliency in the United States, TIA believes that any further regulatory activity would indeed create further barriers to real improvement in networks; would work against the efforts of the Commission to improve the reliability and resiliency of networks; and would fail to adequately consider legal and contractual barriers network operators would face in implementing new reliability mandates, on the Federal, state, and local level. TIA is confident that the record will demonstrate this, and will defer discussion on specific authority-related issues until necessary.

IV. TIA SUPPORTS THE COMMISSION'S PROPOSAL TO TERMINATE THE *KATRINA* AND *SURVIVABILITY* PROCEEDINGS

In the NOI, the Commission proposes to eliminate the *Katrina* and *Survivability* proceedings because they the issues raised in this proceeding are "interrelated to and overlap with issues raised in both the Survivability NOI and the Katrina Panel proceeding."[38] TIA supports this proposal from the Commission – particularly the supplementary proposal that the Commission "consider the record of the two terminated proceedings, to the extent relevant, in this proceeding."[39] Taking this action would be in the public interest by promoting efficiency principles. Additionally, TIA believes that the record in these two proceedings will certainly help to reinforce for the Commission the resilient state of communications networks in the United States.

[37] *See Motor Vehible Mfrs. Ass'n of U.S., Inc. v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43.

[38] NOI at ¶ 51.

[39] *Id.*

V. CONCLUSION

In a day in age when everyone relies so heavily on communications networks, the resiliency and reliability of these networks is of paramount importance. TIA supports the Commission's efforts to ensure that these networks are reliable and resilient. However, the Commission should refrain from taking regulatory action and encourage and allow network operators and vendors to continue their voluntary efforts in improving the reliability of their networks. The technology and effort already exists and any regulation by the Commission could jeopardize a system that already pushes companies to maintain networks that are as resilient and reliable as possible. Further, the Commission should ensure that it has sufficient jurisdiction to undertake any new reliability rules.

Respectfully submitted,

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